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Sent: 6/12/2015 7:26:06 PM
Subject: PFOA PFOS Sampling - Crash Site
Attachments: FFFC Fact Sheet.pdf

Kim,

The question before us is whether or not to sample for PFOA/PFOS at a recent crash site where AFFF was released. Because of the complexities and ever evolving science there is no definitive answer. We could collect a sample for PFOA and PFOS today and find nothing but come back in several years and find PFOA due to degradation, which itself is ever evolving. There may be some question as to exactly which AFFF was used in a specific fire or exactly when the AFFF itself was manufactured as manufacturers attempt to reduce the carbon chain lengths of these molecules. Based on our current understanding of the manufacturing process of the AFFF that was apparently used sampling for PFOA and PFOS is not warranted but there are several confounding factors that make this conclusion less clear.

Judy Solomon spoke directly with a chemist at National Foam's (the manufacturer of Centurion 3% AFFF) who told her that 35% of the fluoroalkyl surfactant was of carbon chains 8 and above (C8). The chemist also stated that starting this year, the company had begun to move towards C6 and away from the C8 chains. No PFOS was used in their manufacturing process, but PFOA was possibly present.

The fact that this chemist suggest that PFOA may be present in the material seems counter to most everyone's understanding of the manufacturing process, as well as the Fire Fighting Foam Coalition factsheet itself [(FFFC) www.FFFC.org] , which states that PFOA/PFOS are NOT used in the manufacturing process.

One very important point that the fact sheet includes is a discussion that long chain fluorotelomers (the ones in these products) C8 and above may break down into PFOA. Research suggest that shorter chain compounds (C6 and below) have lower toxicity and as such the manufacturing is going in that direction.

However, because of the Navy's large stockpile of AFFF spanning decades we should assume the AFFF contain C8 and above, regardless of what the manufacturing process is currently. The precarious position this leaves remedial managers is even if the samples collected today are free of PFOA does not suggest they will be "clean" in the future, due to degradation of these longer chain molecules that currently is poorly understood.

Judy also spoke with a chemist at Ansul (Ansulite 3% AFFF). The representative stated that because the foam process that was being used was the telomer process, and not the process that 3M used (electrochemical fluorination), then PFOA and PFOS were not byproducts. The person went on to say that the commercial grade of the Ansulite 3% AFFF was 95% C6 compliant. Again, one needs to keep in mind that this is product being manufactured today and not necessarily what was manufactured last year, even though it's from the same company.

Because of the large amount of AFFF in the Navy's inventory I wanted to better understand what steps, if any, the Navy was taking to reduce the use of AFFF manufactured by 3M or AFFF that might degrade into PFOA. I spoke with Mr. Thompson of the Navy Region Mid-Atlantic Fire and Emergency Services to understand if he had been instructed to remove any specific AFFF from use. He replied that he was unaware of any such instructions and suggested that they use any AFFF on hand.

Based on the evidence we have, that the MSDS's represent ALL the AFFF used, that the chemist at National Foam was incorrect in the manufacturing process and that PFOA is NOT used, the Navy may wish to delay sampling but should be aware that PFOA may be present in the future.

The bottom line is until we clearly understand what is in our inventory, what chemicals are posing a risk and what the fate and transport of these chemicals might be, including parent and degradation products, there is NO clear path.

Please feel free to contact with any additional questions and we will do our best to provide the best answer that we can.

v/r

Ken